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INTERNATIONAL PRELIMINARY EXAMINATION REPORT


(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference N/2AK36/BL/2p	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/NL 03/00493	International filing date (day/month/year) 03.07.2003	Priority date (day/month/year) 03.07.2002
International Patent Classification (IPC) or both national classification and IPC B05B11/00		
Applicant KELTUB B.V. et al.		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 4 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 3 sheets.</p>		
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the opinion</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>		
Date of submission of the demand 12.01.2004	Date of completion of this report 07.09.2004	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Eberwein, M Telephone No. +49 89 2399-7260	



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/NL 03/00493**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-9 as originally filed

Claims, Numbers

1-21 received on 23.08.2004 with letter of 23.08.2004

Drawings, Sheets

1/13-13/13 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-21
	No: Claims	
Inventive step (IS)	Yes: Claims	1-21
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-21
	No: Claims	

2. Citations and explanations

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/NL 03/00493

To Point V:

The subject-matter defined in claim 1 is regarded as novel and inventive since an assembly of bellow part and co-acting part wherein the outer end of the co-acting part is substantially conical is neither known nor rendered obvious by the prior art documents involved in the procedure.

Consequently, the subject-matter of claim 1 meets the requirement of Article 33(2)(3) PCT.

Claims 2-20 are dependent on claim 1 and therefore also meet the requirements of Article 33(2)(3) PCT.

Claim 21 relates to an use-claim, claiming the use of the assembly according to claims 1-18.

Further remarks

Certain defects in the international application

The description does not cite a document reflecting the closest background art (see Rule 5.1a) ii) PCT).

23. 08. 2004

NEW CLAIMS

(78)

1. Assembly of bellows part (3) and co-acting part (4), comprising a bellows part (3) with a flexible wall (5) of a predetermined shape and thickness which co-operates with the co-acting part (4), which comprises a stiff outer wall along which the flexible wall (5) is movable, characterized in that an outer end (6,7; 34; 38; 50, 52) of the co-acting part (4) is substantially conical.

10

2. Assembly as claimed in claim 1, wherein the co-acting part (4) is a part against which unrolling takes place (unrolling part (4)) and wherein the stiff outer wall has a predetermined diameter variation and/or the flexible wall (5) has a predetermined thickness variation so as to cause a desired development of force.

15

3. Assembly as claimed in claim 1 or 2, wherein the flexible wall (5) is partially turned back and wherein a turned-back edge (27) is arranged on an outer end thereof for the purpose of absorbing a pressure force.

20

4. Assembly as claimed in claim 2 or 3, wherein the development of force is constant, increasing, decreasing or a combination thereof.

25

5. Assembly as claimed in claim 2, 3 or 4, wherein the development of force comprises one or more peaks.

30

6. Assembly as claimed in any of the claims 1-5, wherein the outer wall of the unrolling part (4) comprises a thickened portion (54) for the purpose of causing a peak in the development of force.

7. Assembly as claimed in any of the claims 1-6, wherein the outer wall of the unrolling part (4) comprises a bend (6,7).

5

8. Assembly as claimed in claims 1-7, wherein the outer wall of the unrolling part (4) comprises a part of concave cross-section (34) for the purpose of causing an increasing spring force.

10

9. Assembly as claimed in any of the claims 1-8, wherein the outer end of the unrolling part (4) comprises a part of convex cross-section (38) for the purpose of causing a decreasing spring force.

15

10. Assembly as claimed in any of the claims 1-9, wherein the thickness variation of the flexible wall (5) of the bellows part (3) at least partially determines the development of force.

20

11. Assembly as claimed in any of the foregoing claims, wherein the bellows part (3) is of a thermoplastic polymer or an elastomer.

25

12. Assembly as claimed in any of the foregoing claims, wherein the flexible wall (5) of the bellows part (3) is substantially cylindrical.

30

13. Assembly as claimed in any of the foregoing claims, wherein the wall of the bellows part (3) is of substantially convex cross-section.

14. Assembly as claimed in any of the foregoing claims, wherein the bellows part (3) comprises an integrated pressure valve (28) and/or an integrated suction valve (26).

5 15. Assembly as claimed in claim 14, wherein the suction valve (26) comprises a number of, for instance three, legs (60; 70; 72; 74) which are connected to the flexible wall (5).

10 16. Assembly as claimed in claim 15, wherein the legs (70; 72) are Z-shaped in top view for an improved spring action.

15 17. Assembly as claimed in claims 14-16, wherein the suction valve (26) comprises a guide protrusion (62) for guiding the suction valve.

20 18. Assembly as claimed in claims 14-17, wherein the pressure valve (28) is a cylindrical flexible wall.

 19. Pump (1; 100) comprising an assembly as claimed in any of the claims 1-18.

25 20. Pump (100) as claimed in claim 19, comprising a pistol mechanism in which the assembly is incorporated.

 21. Method for using an assembly as claimed in any of the claims 1-18 and/or a pump (1; 100) as claimed in claims 19-20.